3GPP TSG-RAN WG4 Meeting #111 R4-2410602

Fukuoka, Japan, May 20th – 24th, 2024

**Agenda item:** 10.10.3

**Source:** Intel Corporation

**Title:** WF on UE RF requirements for Rel-19 NR channel BW less than 5MHz for FR1 Phase 2

**Document for:** Approval

# Topic #2: UE RF requirements for inter-band NR CA/DC with less than 5MHz CBW

### Issue 1-1: Support of 5MHz CBW in band n100 for CA\_n100-n101 and and NR DC\_n100-n101

* Agreement (online session)
	+ In RAN4 common understanding, the support of 5MHz CBW on band n100 and 5MHz/10MHz on n101 in the band combination with band n100 and n101 can be included in Rel-19 WID.

### Issue 1-2: ΔTIB,c for CA\_n100-n101 and and NR DC\_n100-n101

* Agreement (online session)
	+ ΔTIB,c = 0.3 dB for CA\_n100-n101 and NR DC\_n100-n101

|  |  |
| --- | --- |
| Inter-band CA combination | ΔTIB,c for NR bands (dB) |
| Component band in order of bands in configuration |
| CA\_n100-n101 | 0.3 | 0.3 |

### Issue 1-3: MSD requirements

* Agreement (online session)
	+ Do not specify MSD requirements for CA\_n100-n101 and NR DC\_n100-n101
	+ MSD requirements for other band combinations for BW less than 5 MHz can be discussed in the basket WI(s)

### Issue 1-4: Spurious emissions for UE co-existence for CA\_n100-n101 and and NR DC\_n100-n101

* Agreement (online session)
	+ Spurious emissions for UE co-existence for CA\_n100-n101

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| --- | --- |
| NR CA combination | Spurious emission |
|  | Protected Band | Frequency range (MHz) | Maximum Level (dBm) | MBW (MHz) | NOTE |
| CA\_n100-n101 | Frequency range | 758 | - | 788 | -50 | 1 |  |

### Issue 1-5: Power class for UL inter-band CA for CA\_n100-n101

* Whether to define PC1 for UL inter-band CA for CA\_n100-n101 can be discussed in RANP.

### Issue 1-6: UE capability and network signalling

* Agreement
	+ FFS whether any updates to Rel-18 UE capability signalling are needed to enable less than 5 MHz CBW operation for CA/DC.
	+ Further potential enhancements can be further discussed for SCell with less than 5MHz.
		- FFS whether UEs needs to be informed that SCell has 12 PRB or 20 PRB transmission bandwidth for 3MHz or 5MHz CBW, respectively

### Issue 1-7: Sync raster applicability for Scell with < 5MHz CBW for CA\_n100-n101

* FFS whether any restrictions on ARFCN for SSB locations for SCell SSB need to be defined
	+ Option 1: Require less than 5 MHz SCell to be associated with the new sync raster points for less than 5MHz, similar as PCell.
	+ Other options are not precluded

### Issue 1-8: CR handling

* Draft CRs can be submitted for endorsement in RAN4 #112 (August 2024)
* CR work split for TS 38.101-1

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| --- | --- |
| Big CR for TS 38.101-1 | Intel |
| 5.2A Operating bands | [ZTE] |
| 5.3 UE channel bandwidth | Nokia |
| 5.5A Configurations for CA | [CATT] |
| 5.5B Configurations for DC | [CATT] |
| 6.2A.1 UE maximum output power for CA | Qualcomm] |
| 6.2A.4 Configured transmitted power for CA | [Qualcomm] |
| 6.2B.1 UE maximum output power for NR-DC | [Qualcomm] |
| 6.5A Output RF spectrum emissions for CA | [Huawei] |
| 7.3A.2 Reference sensitivity for CA | [Ericsson] |